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RESPONSE TO MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION COMMENTS ON FINAL REPORT MONITORING EVENT 11, SITES 1 AND 3 AND THE EASTERN PLUME, MARCH 1998

3/1/98

GENERAL COMMENTS

1. Annual reports should include an appendix section containing the regulatory comments received for the previous year. As an advance notice, the Department requests that the Navy include response to comment letters from the DEP and EPA with the Monitoring Event 13 submittal.

   Response—This comment is noted. The Final 1998 Annual Report will contain a summary of State and EPA comments.

2. As in past reports, water-level data analyses continue to show that extraction wells EW-1 through EW-5 are creating more drawdown in the shallow aquifer than in the more contaminated deep aquifer. DEP is concerned that the above wells are not accomplishing effective reduction in contaminant mass at depth in the ground-water system. The Department realizes that new well EW-2A may significantly improve this situation with time. However, depending on the findings of planned drilling south of EW-2A this fall, we may want to discuss what changes are needed to capture more plume mass by concentrating extraction on the deeper strata.

   Response—The Navy is considering ways to improve the mass removal of the extraction system and will present such recommendations in the Annual Report.

3. Data tables 12 through 16 should show exceedances of MCLs/MEGs in bold. Even if there are no exceedances, the footnote "Results in bold indicate concentrations above Federal MCL and/or State MEG" should still be listed, providing the reader with a quick way to scan for exceedances.

   Response— This comment is noted.

SPECIFIC COMMENTS

4. ***Introduction, Section 1.1, Page 1, 3rd Paragraph***—Please provide the date of extraction system startup for general reference. Suggested rewording of the third sentence is: "Remedial pumping of ground water in the Eastern Plume has occurred since month/year using a treatment system..."

   Response—Additional clarification has been added to Section 1.1 to specify when the extraction system became operational.

5. ***Introduction, Section 1.1, Page 1, 5th Paragraph***—"Note that the format of future monitoring event reports will be simplified beginning with Monitoring Event 12."

   The Department suggests the following wording: "*With the concurrence of the U.S. Environmental Protection Agency (EPA) and Maine Department of Environmental Protection (MEDEP), the format of future monitoring event reports will be simplified beginning with Monitoring Event 12.*"

   Response—The recommended changes have been made to the Monitoring Event 12 report.

6. ***Measurement of Water Level Elevations, Section 1.2, Page 2, 3rd Paragraph***—"Water elevation data were collected during a period of consistent weather conditions, with no precipitation noted during the January and March gauging periods."

   The duration of a gauging period is unspecified. Major precipitation events that occur within a week prior to the start of measurements should be mentioned.

   Response—Gauging period durations are listed on each potentiometric surface figure. If major precipitation events occur immediately prior to gauging, this will also be noted.

7. ***Landfill Gas Monitoring and Cap Inspection, Section 1.5, Page 5, 2nd Paragraph***— "These corrective actions are scheduled to occur in Spring 1998 and will include..."

   DEP is not aware that these corrective actions have occurred. If they have occurred, please state what was done. If the actions have not occurred, this statement should be updated with the current schedule.

   Response—Landfill repairs have been rescheduled to occur during Fall 1998, as noted in the Monitoring Event 12 report.

8. ***Water Level Gauging, Section 2.1, Page 6, Bottom of lst Paragraph***—"Daily pumping rates for each extraction well for the period 1 December through 31 March 1998 are provided in Table 5."

   Please add a short discussion as to how and where the readings for each well were made, or determined.

   Response—Extraction well flow rates were determined on a time-averaged basis, although recent plant modifications include real time flow readings at each extraction well.

9. ***Water Level Gauging, Section 2.1, Page 7, 1st Paragraph, 2nd Sentence***—"Potentiometric surface elevations at shallow monitoring points measured on 7-8 January 1998 near extraction wells EW-l, EW-3, and EW-4."

   This sentence appears to be incomplete and that additional information may be missing.

   Response—This comment is noted. The word "were" was inadvertently omitted before "measured" in this sentence.

10. ***Water Level Gauging, Section 2.1, Page 7, 1st Paragraph, Last Sentence***—"The combination of the emplacement of the slurry wall at Sites 1 and 3... and active pumping at extraction well EW-1 has created a ground-water trough located southeast of Site 1 (Figures 5 and 6)."

    This trough was naturally existing prior to remedial pumping in the form of a narrower, substantially lower water table gradient depression aligned along Mere Brook (see Figure 8-13 of the Supplemental RI/FS Report). The effect of the slurry wall and remedial pumping apparently has been to widen the trough and steepen its hydraulic gradient.

    Removal of approximately 20,000 gal per day from the aquifer in recent years at EW-1 probably has not been as effective in changing the water table contours as has the landfill slurry wall and internal pumping by EW-6 and EW-7. This statement should be modified to not suggest that a ground-water trough was created; only that an existing trough was enlarged.

    Response—The Navy would like to discuss this comment with the MEDEP. The ground-water trough is significantly larger than prior to completion of the slurry wall and, therefore, the Navy does not believe the effectiveness of the remedial actions at Sites 1 and 3 should be minimized.

11. ***Water Level Gauging, Section 2.1, Page 7, 2nd Paragraph***—"Well gauging data collected on the 7-8 January and 3 March 1998 (Figures 7 and 8) indicate that the majority of drawdown due to the operation of extraction wells EW-1 through EW-5 was observed in the shallow overburden monitoring wells."

    The use of the phrase "majority of drawdown" is technically not appropriate in this context. The Department suggests the following "*...indicate that larger drawdowns exist in the shallow overburden monitoring wells than in monitoring wells screened in the deeper coarse sand unit, as a result of pumping from the eastern plume extraction wells.*"

    This condition of less extensive drawdown in the deep sand unit is potentially a major concern to MEDEP (see General Comment No. 2.)

    Response—This comment is noted. As per the streamlined format of the monitoring event reports, discussion of remedial operations will be limited to the annual report.

12. ***Water Level Gauging, Section 2.1, Page 7, 3rd Paragraph***—Comparisons of potentiometric heads with the pre-extraction May 1995 elevations were initially appropriate. However, the Department would prefer that comparisons now be drawn with values given in the previous monitoring report, and that recent trends be presented. In that the water table is only 0.7 feet below the bottom of the landfill waste, cognizance of rising or declining trends are critical so as to prevent resaturation from occurring through early warning. The Department anticipates that this new comparison approach will be applied to the next annual report (Monitoring Event 13, November 1998).

    Response—This comment is noted. Graphs showing data trends for water elevations inside the Sites 1 and 3 landfill have been added to the Monitoring Event 12 report, as requested by MEDEP and EPA.

13. ***Water Level Gauging, Section 2.1, Page 7, 4th Paragraph***—"However, a decreasing potentiometric head with depth (downward vertical gradient component) is generally observed in the upland areas, such as near the Weapons Compound (Building No. 539) and south of Mere Brook."

    This paragraph is identical to that in the Event 10 report. In its June 1998 comment letter, the Department suggested that the statement was inaccurate, as MW-231A and B lie south of Mere Brook and show an upward gradient. The inclusion of "south of Mere Brook" appears to be based solely on pre-pumping water level measurements at the MW-230A/MW-230B well pair. The strong downward gradient at this location measured prior to remedial pumping is a major concern, and the Department recently proposed that additional data are needed to address ground-water quality and gradients south of Mere Brook. The exact nature of new data for this area is currently under negotiation with the Navy. In the meantime, the sentence in question should be deleted from the report.

    Also, MW-230B should be added to the LTMP for vertical gradient definition.

    Response—This comment is noted. As per the streamlined format of the monitoring event reports, discussion of hydraulic gradients will be limited to the annual report. Monitoring Event 12 data do not indicate VOC are present in either the shallow or deep interval near MW-230 and, therefore, previously measured downward flow gradients may not be of significant concern. The Navy would like to discuss this comment during an upcoming technical meeting. Addition of MW-230B to the gauging program will be addressed as part of comments on the Draft Long-Term Monitoring Plan for Sites 1 and 3 and Eastern Plume.

14. ***Water Level Gauging, Section 2.1, Page 8, 2nd Paragraph***—A statement should be added that addresses whether the validity of water level data was comprised by well integrity problems at each of the repaired wells.

    Response—Monitoring wells have been repaired and provide valid water elevation data. Previous water elevation data were not significantly impacted.

15. ***Sites 1 and 3 and Eastern Plume, Section 2.2.1, Page 9, lst Paragraph***—"It should be noted that Mere Brook has had beaver activity, which has caused the water level to rise resulting in elevated turbidity (i.e., greater than 1,000 NTU) occurring at 1 of the 2 leachate seep samples."

Is the beaver dam just upstream of the seeps? A fuller explanation is desirable.

Response—The location of beaver activity will be clarified in future monitoring event reports.

16. ***Ground-Water Extraction and Treatment System, Section 2.2.2, Page 9, 1st Paragraph***—"It should be noted that the 2 Sites 1 and 3 extraction wells (EW-6 and EW-7) were permanently deactivated on 19 November 1997."

Please delete the word "permanently."

Response—The Navy agrees with this comment and will remove the word "permanently" from this sentence.

17. ***Sites 1 and 3, Section 2.3.1, Page 11, 2nd Bullet***—"Arsenic was reported at a concentration of 301 μg/L in MW-218, which exceeds the Federal MCL of 50 μg/L."

Arsenic concentration has tripled the last two sampling events, and is now 6 times the MCL. The increasing trend was noted in the Department's comments for Monitoring Event 10. This monitoring well is located close to directly downgradient of the west end of the slurry wall. It is also noted that the reported purge water temperature is 18.3°C, which is significantly higher than temperatures at other wells. Turbidity was low at 14 NTUs. The relatively high arsenic concentration likely is related to reducing conditions caused by the very low dissolved oxygen associated with the landfill plume. However, other wells in the area do not show significant arsenic in ground-water samples. The Navy needs to provide their interpretation to what is happening at MW-218, as this well is approximately 150 ft from Mere Brook.

Response—This comment is noted and will be addressed in the 1998 Annual Report, when site-wide data trends are reviewed and addressed.

18. ***Perimeter Monitoring Wells, Section 2.3.2.2, Page 13, 1st Paragraph***—"One perimeter monitoring well at Sites 1 and 3 (MW-218) reported elevated concentrations of arsenic and manganese above State MEG or Federal MCL, consistent with previous sampling events."

It should be stated that arsenic levels have tripled the past two sampling events, from 99 μg/L to 301 μg/L. As such, this well is not truly a perimeter well because the MCL for arsenic is exceeded six times. The Navy should consider dropping it from this category of wells.

Response—This comment is noted and will be addressed in the 1998 Annual Report, when site-wide data trends are reviewed and discussed.

19. ***Ground-Water Extraction and Treatment System, Section 2.3.3, Page 13, 2nd Paragraph***—"A total of 9 target analytes were reported in the treatment system samples."

The Department suggests deleting this sentence as it is duplicates the first sentence in the paragraph. Also, please add the names of the five VOCs that exceeded MCLs/MEGs, and their concentrations.

Response—The requested changes will be made in the text of the Monitoring Event 12 report.

20. ***Surface Water, Section 2.4, Page 13***—A map showing the locations of SW-1 through SW-7 needs to be added to the report, and referenced in this section. The map should show site boundaries, and include Site 2. It should be clarified which of the SW monitoring sites are associated with Landfill Sites 1 and 3 and which are associated with the Eastern Plume

Response—Surface water locations 1 through 7 are shown on Figure 3. Both Sites 1 and 3 are contained within the cap and slurry wall and, therefore, specific locations of each site are not considered to be necessary. Table 1 identifies SW-1 through SW-7 as associated with Sites 1 and 3.

21. ***Sediment, Section 2.5, Page 14, 2nd Paragraph***—"A total of 21 target inorganic analytes were reported in sediment samples."

This statement should be followed by briefly summarizing if any significant elevated concentrations are present in Table 14.

Response—This comment is noted, and the Monitoring Event 12 report will be revised as suggested.

22. ***Sediment, 2.6.2, Page 14, 2nd Paragraph***—"Target inorganic analytes were reported in the leachate station sediment samples."

This sentence is repetitive with the preceding sentence.

Response—This comment is noted, and the Monitoring Event 12 report will be revised as suggested.

23. ***Table 12, EW-04 VOC Results***—As verbally communicated with EA Engineering in June, the given values for 1,1.1-Trichloroethene (160D) and Trichloroethene (490D) are interchanged. This should be corrected.

Response—This comment is noted.

24. ***Figure 3, Monitoring Well Location Plan***—At the 18-20 May LTMP meeting, our notes show that the group agreed to remove the plume shape (boundary) from the monitoring events reports, as it largely reflects plume expanse during the RI/FS period. At the very least, the Department requests that the legend state the year that the plume boundary was determined.

Response—This comment is noted, and the Monitoring Event 12 report will be revised as suggested.

25. ***Figures 5 Through 10, Maps with Water Table and Potentiometric Contours***—The southernmost contouring near Mere Brook does not look realistic for both shallow and deep ground water. Although data points do not exist south and east of MW-318, Department feels that the contours should bend to the south and would become parallel to the brook with increasing distance downstream. Also, it seems unlikely that shallow ground-water contours 24, 27, and 30 cross Mere Brook as straight lines in the Sites 1 and 3 area. Please make these adjustments, or contact us to discuss why they are valid as drawn.

Response—The Navy will revise the southernmost contours, as requested. At Sites 1 and 3, the contours drawn have been dashed, indicating they are inferred based on limited in this area.